

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 December 2004 (29.12.2004)

PCT

(10) International Publication Number
WO 2004/114441 A2

(51) International Patent Classification⁷: H01M 4/04, 4/02

(21) International Application Number:

PCT/JP2004/007865

(22) International Filing Date: 31 May 2004 (31.05.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2003-174136

18 June 2003 (18.06.2003) JP

(71) Applicant (for all designated States except US): NISSAN MOTOR CO., LTD. [JP/JP]; 2, Takara-cho, Kanagawa-ku, Yokohama-shi, Kanagawa 2210023 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SAITO, Takamitsu [JP/JP]. HORIE, Hideaki [JP/JP]. SHIMAMURA, Osamu [JP/JP].

(74) Agents: MIYOSHI, Hidekazu et al.; 9th Floor, Toranomon Daiichi Building, 2-3, Toranomon 1-chome, Minato-ku, Tokyo 1050001 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

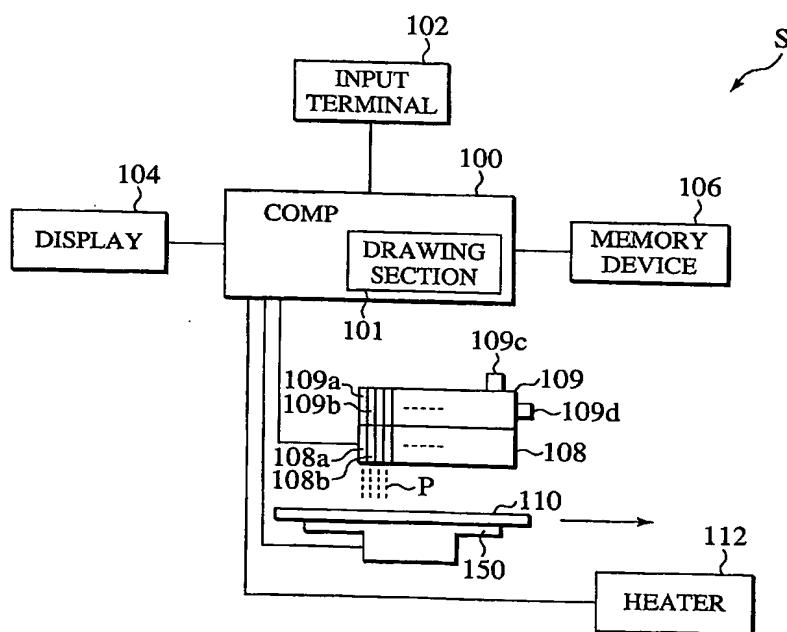
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: METHOD OF MANUFACTURING SECONDARY BATTERY ELECTRODE, APPARATUS FOR MANUFACTURING THE SAME AND SECONDARY BATTERY ELECTRODE



(57) Abstract: With a method of manufacturing a secondary battery electrode having active material (111) on a current collector (110), a computer (100) acquires a deposition pattern (PT) for depositing a plurality of kinds of active materials, different in electrical characteristics, onto discrete areas of a current collector, and the computer allows injection nozzles (108) to inject the plurality of kinds of active materials onto the current collector as multiple particles (P), respectively, to be deposited thereon, thereby forming an active material layer.

WO 2004/114441 A2



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
29 December 2004 (29.12.2004)

PCT

(10) International Publication Number
WO 2004/114441 A3

(51) International Patent Classification⁷:
4/02, 8/10

H01M 4/04,

(74) Agents: MIYOSHI, Hidekazu et al.; Toranomon Kotohira Tower, 2-8, Toranomon 1-chome, Minato-ku, Tokyo 105-0001 (JP).

(21) International Application Number:

PCT/JP2004/007865

(22) International Filing Date: 31 May 2004 (31.05.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2003-174136 18 June 2003 (18.06.2003) JP

(71) Applicant (for all designated States except US): NISSAN MOTOR CO., LTD. [JP/JP]; 2, Takara-cho, Kanagawa-ku, Yokohama-shi, Kanagawa 2210023 (JP).

(72) Inventors; and

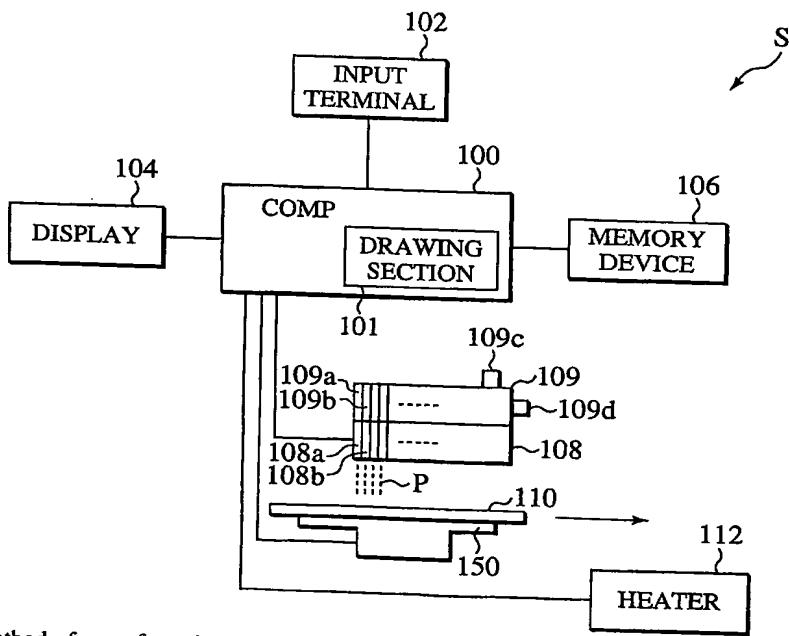
(75) Inventors/Applicants (for US only): SAITO, Takamitsu [JP/JP]. HORIE, Hideaki [JP/JP]. SHIMAMURA, Osamu [JP/JP].

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHOD OF MANUFACTURING SECONDARY BATTERY ELECTRODE, APPARATUS FOR MANUFACTURING THE SAME AND SECONDARY BATTERY ELECTRODE



(57) Abstract: With a method of manufacturing a secondary battery electrode having active material (111) on a current collector (110), a computer (100) acquires a deposition pattern (PT) for depositing a plurality of kinds of active materials, different in electrical characteristics, onto discrete areas of a current collector, and the computer allows injection nozzles (108) to inject the plurality of kinds of active materials onto the current collector as multiple particles (P), respectively, to be deposited thereon, thereby forming an active material layer.

WO 2004/114441 A3



Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

3 November 2005